

REMARKS

The Applicant has amended Claims 1, 2, 4, and 6 and added new Claims 11-15. No new matter has been added to the Claims by any of these amendments. The amendment to Claim 1 and new Claims 11-15 are all fully supported in the specification at pages 38-45 and as shown in FIG. 9. Additionally, Claims 2, 4, and 6 have been amended to correct typographical errors and to more precisely claim the Applicant's invention, all of which is fully supported in the specification.

The present invention is directed to an inspection equipment used to inspect a semiconductor wafer having a predetermined device pattern formed therein, and the like. Traditionally, a semiconductor device is produced with a fine device pattern formed on a semiconductor wafer. In forming such a device pattern, dust or scratches on the semiconductor wafer surface may form a defect. The semiconductor device that incurs such a defect may then be rejected as unacceptable, resulting in a lower yield for the semiconductor device production line. In order to maintain a high yield at the production line, it is desirable to find any defects, locate the cause of the defect, and apply effective remedies to the manufacturing equipment and process. If any of the produced semiconductor devices are found defective, inspection equipment may be used to examine what the defect is, classify the defect, and find out where in the manufacturing process the cause of the defect exists. Inspection equipment use a variety of imaging means, such as an optical microscope, to examine the defects. Applicant has discovered that by including an inspection equipment with both ultraviolet imaging means and visible light imaging means, the inspection equipment can be used to inspect defects of various sizes. Additionally, Applicant has discovered that by including a means for processing the images selectively in response to the size of the defect, the inspection equipment can more efficiently be used to examine semiconductor wafers for defects. For example, the inspection machine may examine and process large defects using only the visible light imaging means and then switch to an ultraviolet light imaging means for examining small defects.

The rejections of Claims 1-4, 6, 7, and 10 under 35 U.S.C. § 102 (b) as being anticipated by *Worster et al.* (U.S. Patent No. 5,479,252) are respectfully traversed. Additionally, the rejection of Claim 5 under 35 U.S.C. § 103 (a) as being obvious in light of *Worster et al.* and further in view of *Aloni et al.* (U.S. Patent No. 5,619,429) is also respectfully traversed. Moreover, the rejections of Claims 8 and 9 under 35 U.S.C. § 103 (a) as being obvious in light of *Worster et al.* and further in view of an article entitled "All-Solid-State Tunable Ultraviolet Ce

"Activated Fluoride Laser Systems Directly Pumped by the Fourth and Fifth Harmonic of Nd:YAG Lasers" by *Liu et al.* are also respectfully traversed. *Worster et al.* describes a laser imaging system used to analyze defects on semiconductor wafers that have been detected by patterned wafer defect detecting systems using an optics head that includes a laser, confocal beam-scanning optics, and ultraviolet and visible photo detection electronics together with commercial microscope components. *Aloni et al.* discloses that a reference other than a database may be employed for inspection. *Aloni et al.* gives an example wherein the object to be inspected comprises a plurality of identical areas, a die to die type procedure may be employed in which a first such identical area may be compared to each of the other identical areas and may serve as a reference therefore.

Neither, *Worster et al.*, *Aloni et al.*, or *Liu et al.* either alone or in combination disclose or even suggest an inspection equipment that includes means for processing images picked up by ultraviolet imaging means and visible light imaging means selectively in response to the defect size of the specimen, as required by Claim 1, and dependent Claims 2-15. While *Worster et al.* discloses an optics head that includes both ultraviolet and visible photo detection electronics, *Worster et al.* does not disclose means for processing images selectively in response to the defect size of the specimen, but rather, discloses that an operator must choose which mode to view the image or defect. (See *Worster et al.* at column 11, lines 26-34) Accordingly, Applicant submits that the claimed invention is neither anticipated by, nor obvious over the applied references. Withdrawal of these grounds of rejections is respectfully requested.

In view of the remarks set forth above, Applicant respectfully submits that the present invention is in condition for allowance. Early notification to such effect is earnestly solicited. Should the Examiner have any remaining issue, Applicant kindly requests the Examiner to contact the undersigned.

Respectfully submitted,

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